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09/754,537	01/04/2001	Bernard G. Harter	3174-000004	2550

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EXAMINER

PEREZ, GUILLERMO

ART UNIT PAPER NUMBER

2834

DATE MAILED: 02/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/754,537

Applicant(s)

HARTER ET AL.

Examiner

Guillermo Perez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 31-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 31 recites the limitation "a third winding retaining section" in line 2. Claim 31 depends on claim 29, but there is no mention of a second winding retaining section in claim 29. The Examiner will interpret that there is a second winding retaining portion for purposes of the rejection, but a second winding retaining portion limitation needs to be added to clarify claim 31.

Claim 32 has a situation similar to the one mentioned above. Claim 32 mentions a fourth winding retaining section, but the claim from which it depends does not mention a third winding retaining section. The Examiner will interpret that there is a third winding retaining portion for purposes of the rejection, but a third winding retaining portion limitation needs to be added to clarify claim 32.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-3, 9, 11-14, and 29-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki et al. (U. S. Pat. 6,166,468).

Referring to claim 1, Suzuki et al. disclose an electric machine with a circumferentially segmented stator, a winding end cap assembly for a stator segment assembly including a stator core defining a stator pole, comprising:

first and second end caps (40 and column 4, lines 32-35) that are connected to opposite axial end surfaces of the stator core; and

a first inner winding retainer section (30) that extends axially to connect an inner end (64) of the first end cap (40) to an inner end (64) of the second end cap (40).

Referring to claim 2, Suzuki et al. disclose a second inner winding retainer section (30 and column 4, lines 8-9) that extends axially to connect the inner end (64) of the first end cap (40) to the inner end (64) of the second end cap (40).

Referring to claim 3, Suzuki et al. disclose that the first and second end caps (40) include an outer section (50), an inner section (52) and a hub section (46) that connects the outer section (50) to the inner section (52).

Referring to claim 9, Suzuki et al. disclose that the outer section (50) of the first end cap (40) receives first (56) and second (58) terminals for connecting to opposite ends of winding wire.

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Referring to claim 11, Suzuki et al. disclose that the first and second end caps (40) and the first and second inner winding retainer sections (30) define a continuous annular channel (44 and 42) that receives winding wire (72).

Referring to claim 12, Suzuki et al. disclose first and second outer retainer sections (60) that connect the first and second end caps (40) adjacent to the outer sections (50) of the first and second end caps (40).

Referring to claim 13, Suzuki et al. disclose that the outer section (50) includes a cavity (60).

Referring to claim 14, Suzuki et al. disclose that the outer section (50) includes a groove on a radially outer surface thereof.

Referring to claim 29, Suzuki et al. disclose a stator segment assembly (10) for a circumferentially segmented stator of an electric machine, comprising:

a stator segment core for a stator pole of the stator segment assembly that includes first and second side surfaces that extend axially;

a first winding retainer section (52) that extends continuously along the first axial side surface (18); and

winding wire (72) that is wound around the stator segment core (10) and that is retained by the first winding retainer section (52).

Referring to claim 30, Suzuki et al. disclose a second winding retainer section (52) that extends continuously along the second axial side surface (18).

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Referring to claim 31, Suzuki et al. disclose a third winding retainer section (54) that extends continuously along the first axial side surface (18) in a position that is radially outside of the first winding retainer section (52).

Referring to claim 32, Suzuki et al. disclose a fourth winding retainer section (54) that extends continuously along the second axial side surface (18) in a position that is radially outside of the second winding retainer section (52).

Referring to claim 33, Suzuki et al. disclose a first end cap (40) that is connected to one end surface (18) of the stator segment core (10) and that is connected to one end of the first winding retainer section (52);

a second end cap (40) that is connected to an opposite end surface (18) of the stator segment core (10) and that is connected to an opposite end of the first winding retainer section (52).

Referring to claim 34, Suzuki et al. disclose a stator segment assembly (10) for a circumferentially segmented stator of an electric machine, comprising:

a stator segment core defining a stator pole;

a winding retainer (40) attached to the stator segment core (10), wherein the winding retainer (40) defines a substantially continuous annular channel (between 54 and 52) around the stator segment core (10); and

winding wire (72) that is wound in the continuous annular channel.

Referring to claim 35, Suzuki et al. disclose that the winding retainer (40) is made of insulating material.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 4-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. in view of Trago et al. (U. S. Pat. 5,806,169).

Suzuki et al. disclose substantially teaches the claimed invention except that it does not show that the winding end cap assembly is made of a magnetically insulating material and the electric machine is a switched reluctance electric machine.

Trago et al. disclose that the winding end cap assembly (71,90) is made of a magnetically insulating material and the electric machine is a switched reluctance electric machine. The invention of Trago et al. has the purpose of insulating the winding from the magnetic core.

It would have been obvious at the time the invention was made to modify the stator of Suzuki et al. disclose and provide it with the insulating material in a switched reluctance electric machine for the purpose of insulating the winding from the magnetic core.

Referring to claim 10, no patentable weight has been given to the method of manufacturing limitations (i. e. molded) since "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the

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product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

3. Claims 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCoy in view of Trago et al. (U. S. Pat. 5,806,169).

McCoy substantially teaches the claimed invention except that it does not show that the winding end cap assembly is made of a magnetically insulating material and the electric machine is a switched reluctance electric machine.

Trago et al. disclose that the winding end cap assembly (71,90) is made of a magnetically insulating material and the electric machine is a switched reluctance electric machine. The invention of Trago et al. has the purpose of insulating the winding from the magnetic core.

It would have been obvious at the time the invention was made to modify the stator of McCoy and provide it with the insulating material in a switched reluctance electric machine for the purpose of insulating the winding from the magnetic core.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the end caps and the winding retainer sections integrally since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U. S. 164 (1893).

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4. Claims 15-19, and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCoy in view of Trago et al. as applied to claims 4 above, and further in view of J. M. Barr (U. S. Pat. 1,756,672).

McCoy and Trago et al. substantially teaches the claimed invention except that it does not show that the stator is segmented and includes a plurality of stator segment assemblies. Neither McCoy nor Trago et al. disclose that the stator segment assemblies comprise a stator segment core including a stack of stator plates that have a radially outer rim section and a tooth section that extends radially inwardly from a center portion of the radially outer rim section.

J. M. Barr discloses that the stator is segmented and includes a plurality of stator segment assemblies (figure 1). J. M. Barr discloses that the stator segment assemblies (figure 1) comprise a stator segment core (figure 2) including a stack of stator plates (1) that have a radially outer rim section and a tooth section that extends radially inwardly from a center portion of the radially outer rim section. J. M. Barr's invention has the purpose of reducing the manufacturing costs and allowing the installation of formed coils.

It would have been obvious at the time the invention was made to modify the stator disclosed by McCoy and Trago et al. and provide it with the segmented stator configuration disclosed by J. M. Barr for the purpose of reducing the manufacturing costs and allowing the installation of formed coils.

Response to Arguments

Applicant's arguments with respect to claims 1-14, and 29-35 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's arguments, the recitation "switched reluctance" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

In response to Applicant's remark that McCoy does not disclose some limitations, it must be noted that McCoy discloses first and second end caps (40 and column 4, lines 32-35) that are connected to opposite axial end surfaces of one of the stator poles 16; and a first inner winding retainer section 30 that extends axially to connect an inner end 64 (which is located at an inner end of the hole 44) of the first end cap 40 to an inner end 64 of the second end cap 40.

The portion 64 in McCoy is at an inner end of the end cap 40 as seen in figure 1, and the winding retainer section 30 is connected at that point.

In response to applicant's argument that the references do not disclose a switched reluctance type of machine, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the

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prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Please see Pierson below.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pierson (U. S. Pat. 3,914,859) discloses a commonly known segmented stator for a variable/switched reluctance machine. Also refer to other art in the Notice of References Cited.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3432 for regular communications and (703) 305 3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

Guillermo Perez
February 5, 2003


BURTON S. MULLINS
PRIMARY EXAMINER